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### **NRL signs licensing agreement with Austin AI for smart probe**

(Washington, DC • xx/xx/04) – The Naval Research Laboratory (NRL) recently signed a licensing agreement with Austin AI, LLC of Austin, Texas, for a smart probe that identifies underground minerals and contaminants. The licensing agreement was facilitated by TechLink, a Department of Defense-funded technology transfer organization. The technology has the potential to improve the way that mineral exploration, soil contaminant characterization, and petrochemical and chemical processing are done.

Researchers in NRL's Chemistry Division developed the probe technology to detect metals in soil and to provide quantitative information on their concentration. Austin AI will take the NRL technology and develop the CP-1000 x-ray fluorescence cone penetrometer for commercial applications. The University of Washington and NASA are also interested in developing applications for the technology for use with the Mars Rover.

The probe emits low levels of energy into the soil that reflect back the presence and concentration of elements in the soils. This technology could have applications in areas such as mining exploration and processing, manufacturing, recycling/recovery facilities, and environmental monitoring and remediation.

The NRL technology is an improvement over state-of-the-art probe technologies in several ways. Because the sensor is located inside a penetrometer – a cone tip only a few inches in diameter – it does not require a lot of soil excavation to insert the device into the ground. The probe can be pushed through the ground 100 feet deep and as it moves, it takes readings. This method of collecting readings provides a higher resolution analysis than current soil sampling methods. The samples and analysis do not have to be taken to a laboratory for testing, so time and money are saved. Another important feature is that the probe does not use a radioactive source. Instead, a transformer inside the probe pipe powers the miniature x-ray tube. This makes the device safe for use without advanced training.